

G quantifiers: all, every, both, etc. V science P stress in word families

1 SPEAKING & LISTENING

- a Look at the cartoon. Do you think the father gives a good answer? Why (not)?
- b Read the article. With a partner, try to explain the meaning of the **highlighted** science words. Use the context to help you.
- c Now answer questions 1–8. Choose the correct option.
- d **10.1** Listen to a scientist explaining each fact. Did you get the answers right?
- e Listen again. What did the scientist say about...?
- the reason we can see more blue light than violet light
 - the effect of the Sun's heat on sea water
 - the number of daylight hours that the moon is visible
 - six hours per year
 - what happens in your brain when you blink
 - the function of the cornea
 - the effect of cooler air on water vapour
 - what happens when something with a high mass is compressed
- f Which questions do you think you could now answer if you were asked them by a child?

Daddy, why...?

'Why is the sky blue?' 'Why is the sea salty?' Children are always asking difficult questions like these about the world around us, but in a recent survey, nearly 25% of parents said they didn't know the answers, and 21% admitted that they made the answers up!

Can you answer eight simple science questions that parents struggle to answer?

1 Why is the sky blue?

- A Because the light from the Sun **reflects** off the blue water of the ocean.
- B Because the Earth's atmosphere **scatters** more blue light than red light from the Sun.

2 Why is the sea salty?

- A Because salt **dissolves** into the water from seaweed and other plants.
- B Because salt dissolves into the water from the land around it.

3 Why can we sometimes see the moon during the day?

- A Because as it **rotates** around the Earth, it reflects the Sun's rays during daytime as well as night time.
- B Because sometimes during the day, the Sun doesn't shine as brightly.

4 Why do we have a leap year?

- A Because every four years, the Earth goes round the Sun slightly faster.
- B Because the Earth takes slightly more than 365 days to go round the Sun.



5 Why do we blink?

- A To keep our eyes **moist** and clean.
- B To help us stay awake.

6 Why does cutting onions make us cry?

- A Because they produce a **gas** which irritates our eyes.
- B Because they give off dry **particles** which irritate our eyes.

7 What is a cloud?

- A A mixture of warm gases rising from the Earth.
- B A mixture of **water vapour**, ice, and dust floating in the sky.

8 What is a black hole?

- A A place in space where **gravity** pulls so hard that even light cannot get out.
- B A 'vacuum cleaner' in space that swallows up everything around it.

2 VOCABULARY & PRONUNCIATION

science; stress in word families

a Look at the questions and complete the subject column in the chart.

What is the name for the study of...?

- 1 the natural and physical world
- 2 forces, heat, light, sound, and electricity
- 3 how solids, liquids, and gases react with each other
- 4 people, animals, and plants
- 5 the moon and the planets
- 6 how characteristics are passed through generations
- 7 plants and their structure
- 8 animals and their behaviour

subject	person	adjective
1 <i>science</i>	<i>scientist</i>	<i>scientific</i>
2		
3		
4		
5		
6		
7		
8		

b **10.2** Listen and check. Then try to complete the other two columns.

Stress in word families
In some word groups, the stressed syllable changes in the different parts of speech, e.g. *science*, *scientist*, *scientific*.

- c **10.3** Listen and check. Underline the stressed syllables in the words. In which groups does the stress change on the adjective?
- d Practise saying the word groups.
- e **10.4** Listen and write six phrases using words from the chart in a.

f Complete the sentences with a word from the list.

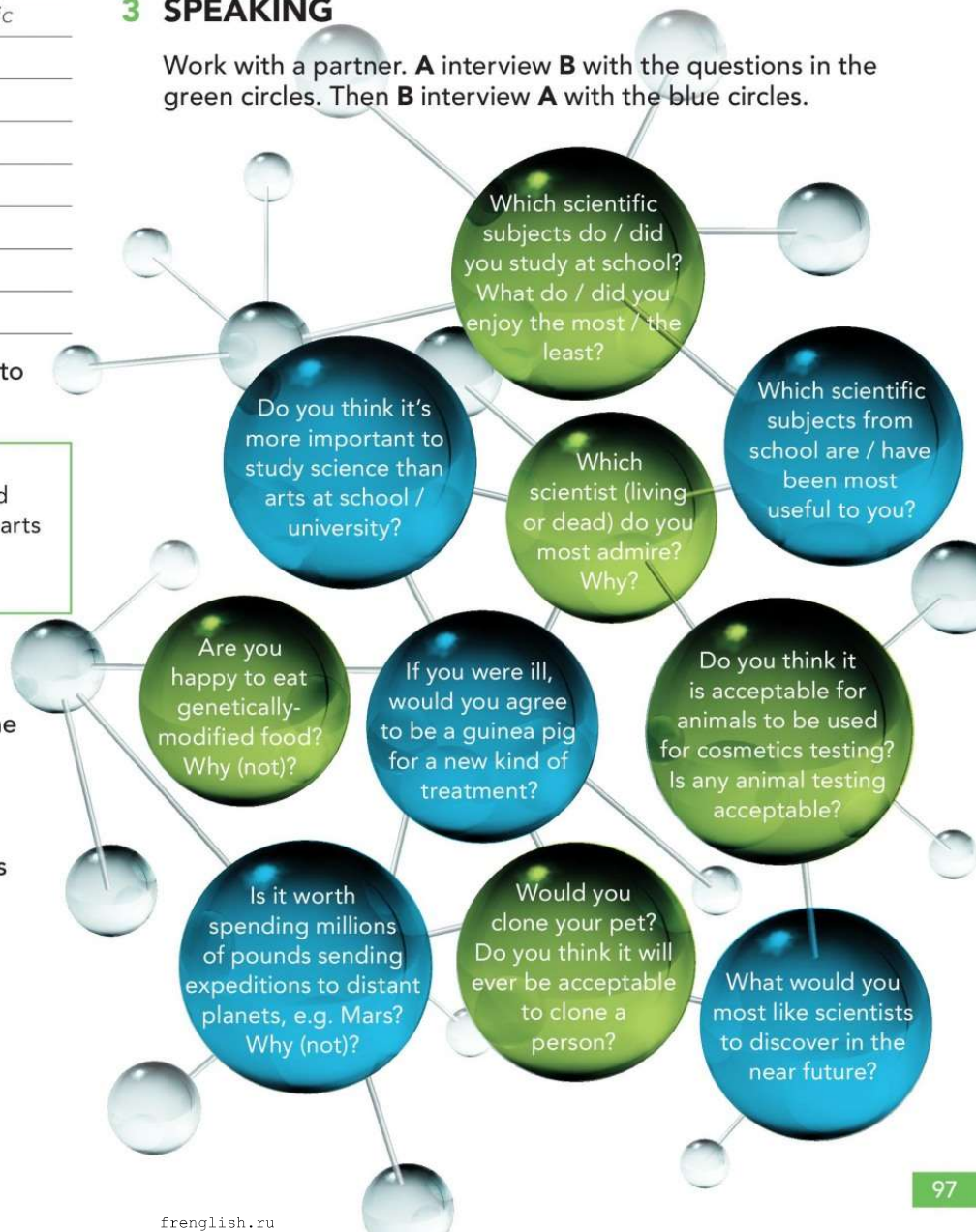
clone discovery drugs experiments guinea pigs laboratory research side effects tests theory

- 1 Scientists **carry out** *experiments* in a _____.
- 2 Archimedes **made** an important _____ in his bath.
- 3 Isaac Newton's experiments **proved** his _____ that gravity existed.
- 4 Before a **pharmaceutical company** can sell new _____, they have to do _____ to make sure they are safe.
- 5 Scientists have to **do** a lot of _____ into the possible _____ of new drugs.
- 6 People can **volunteer** to be _____ in **clinical trials**.
- 7 In 1996, scientists were able for the first time to _____ a sheep, which they named Dolly.

g **10.5** Listen and check, and mark the stress on the multi-syllable words in **bold**. Practise saying the sentences.

3 SPEAKING

Work with a partner. **A** interview **B** with the questions in the green circles. Then **B** interview **A** with the blue circles.



4 READING

- a Talk to a partner. Have you seen any films or TV programmes, or read any books, where...?
- people discover aliens that look a bit like humans on another planet
 - spaceships travel faster than the speed of light
 - people can teleport themselves long distances
 - people can make themselves invisible
 - machines look and behave like humans
 - people can learn something very quickly by plugging themselves into a computer
- b Read an article about the sci-fi concepts in a. Score each one from 1–5, according to what the writer says about how likely it is to happen (1 = very unlikely, 5 = very likely). Then compare with a partner. Did you agree on the scores?

The reality of sci-fi

Just how **plausible** are the ideas we hear about in science-fiction? *LiveScience* examines some popular concepts.



Aliens that look like us

Many fictional aliens have a human-type body. But how likely is it that intelligent alien life would develop a body shape similar to ours? It seems unlikely that organisms evolving for millions of years on another world would fit comfortably into our clothes. But the evolutionary circumstances on alien planets may have been similar to those that led humans to develop arms and legs, and fingers to manipulate tools. Some scientists say that our two-legged, symmetrical body shape could be the 'optimal design for an intelligent being'. Perhaps there is no other choice than for intelligent aliens to look like humans.

Travelling faster than light

Einstein's general theory of relativity says that nothing can travel faster than light. However, this theory doesn't place limits on the speed at which space expands or contracts. Some physicists believe that faster-than-light travel is **a real possibility**. A type of energy bubble around a spaceship, for instance, **could in theory** make space-time contract in front of the ship and expand behind it. Gerald Cleaver, a physicist at Baylor University, says that the objects inside the bubble would move faster than the speed of light in relation to the space around.



Teleportation

Digital information can be transmitted via computers, and in a similar way, some physicists have transmitted another type of information (called quantum information) nearly 10 miles (16 kms). However, this is **a long way from** teleporting actual material, or indeed, a person. Scientifically speaking, teleportation **faces extreme obstacles**. There are ideas for how to do it, but these are **only speculative** at the moment.



Invisibility cloaks

In the *Star Trek* universe, enemies hide, or 'cloak', their spaceships. Scientists say that anti-detection technologies **might be possible**, but invisibility cloaks like those in science-fiction and fantasy are **quite a way off**. 'What you see in *Harry Potter* is **far-fetched**,' says David Smith, professor of electrical and computer engineering at Duke University. 'However, in the last few years, researchers have made a lot of progress on making objects invisible. Partial cloaks that work like sophisticated camouflage - rather like the alien in the 1987 movie *Predator* - **might be achievable**,' says Smith.



Intelligent machines

Robots and computers are already far better than humans at factory work or calculations. However, machines still cannot manage many basic activities, such as tying a shoelace while having a conversation. 'From 50 to 60 years of Artificial Intelligence research, we know that teaching machines to do a specific task, for example, playing a game, is a lot easier than creating a machine that has the common sense of a three-year-old child,' said Shlomo Zilberstein, a professor of computer science. Many scientists believe that highly intelligent machines will be available in the coming decades. But it is questionable whether computers will achieve the human-like ability to feel or understand free will - an idea at the heart of many sci-fi stories.



Instant learning

In the film *The Matrix*, knowledge can be uploaded into the brain in seconds, via a computer plugged into the skull. Some emerging research suggests that the speed at which we learn a skill can be technologically boosted. For instance, scientists have managed to stimulate the brain to improve performance of visual tasks. Perhaps someday, the acquisition of knowledge and skills could happen at broadband-like speeds via surgically implanted and plug-in hardware. 'The concept is **not totally implausible**,' says neuroscientist Bruce McNaughton. 'But it might take a couple of hundred years.'



c With a partner, look at the **highlighted** words and phrases in the article on p.98. Check what ideas they refer to. Then decide whether they mean a) quite likely, b) not very likely, but possible, or c) extremely unlikely.

d Which thing in the article do you think...?

- might happen in the next 50 years
- you would really like to happen
- will never happen

Talking about future possibilities

I'm pretty sure...will

*I'd really like...to happen / exist /
be invented*

I don't think...will ever...

e In small groups, discuss the possibility of the following things happening, and whether or not they would be a good thing.

a colony on Mars
bringing extinct animals back to life
flying cars space tourism
controlling the weather

5 GRAMMAR quantifiers:
all, every, both, etc.

a With a partner, **circle** the correct word or phrase.

- 1 Some scientists think that *all* / *every* intelligent aliens would have a human-like body shape.
- 2 *All the* / *All* evidence suggests that scientists could invent a way to make things invisible.
- 3 Einstein's theory of relativity doesn't explain *all* / *everything* about the universe.
- 4 *No* / *None* machines can currently tie a shoelace and hold a conversation at the same time.
- 5 *Both* / *Both of* David Smith and Shlomo Zilberstein are computer scientists.
- 6 *Either* / *Neither* teleportation nor instant learning are going to be easy to achieve.

b **G** p.150 Grammar Bank 10A

c Do the Science quiz with a partner.

d **10.9** Listen and check.

1 In 'direct current', the electrons...

- a move in only one direction.
- b move in both directions.
- c don't move at all.

2 Helium gas can be found...

- a only in liquid form.
- b in neither liquid nor solid form.
- c in both liquid and solid form.

3 Adult giraffes remain standing...

- a some of the day.
- b all day.
- c most of the day.

4 Of all the water on our planet, ... is found underground.

- a hardly any of it
- b about half of it
- c most of it

5 Snakes eat...

- a only other animals.
- b either other animals or eggs.
- c either other animals or fruit.

6 A diamond can be destroyed...

- a by either intense heat or acid.
- b by both intense heat and acid.
- c only by intense heat.

7 The human brain can continue to live without oxygen for...

- a nearly two minutes.
- b nearly six minutes.
- c a few hours.

8 In our solar system,...

- a neither Pluto nor Neptune are now considered to be planets.
- b both Pluto and Neptune are considered to be planets.
- c Pluto is no longer considered to be a planet.

9 When we breathe out,...

- a most of that air is oxygen.
- b none of that air is oxygen.
- c some of that air is oxygen.

10 An individual blood cell makes a whole circuit of the body in...

- a nearly 60 seconds.
- b nearly 45 seconds.
- c a few minutes.

Science Quiz

10B Free speech

Tell the audience what you're going to say, say it, then tell them what you've said.
Dale Carnegie, US writer and lecturer

G articles **V** collocation: word pairs **P** pausing and sentence stress

1 GRAMMAR articles

- a Who was the first man to walk on the moon? In what year?
- b **10.10** Listen to the original recording of the first words spoken from the moon. With a partner, try to complete the sentence and answer the questions.



THAT'S ONE _____ STEP FOR _____
ONE GIANT LEAP FOR _____.

- 1 What do you think the difference is between a *step* and a *leap*?
- 2 What do you think *mankind* means?
- c **10.11** Listen to an interview about the moon landing. What was the controversy about the words Armstrong actually said? What's the difference in meaning between a *man* and *man*? Did new technology prove him right or wrong?
- d Listen again and answer the questions.
- When did Armstrong write the words he was planning to say when he first stepped on the moon?
 - Does Armstrong say he wrote, 'That's one small step for man...' or 'That's one small step for a man...'?
 - Why doesn't the sentence everybody heard make sense?
 - What did Armstrong think he said?
 - Who is Peter Shann Ford? What did he discover?
 - How did Armstrong feel when he heard about this?
- e Read some more facts about Armstrong. Are the **highlighted** phrases grammatically right or wrong? Correct the mistakes.
- Neil Armstrong was born in **the USA**.
 - He was **a shy boy**, who loved **the books and the music**.
 - He studied aeronautical engineering **at the university**.
 - He was **the first man** who set foot **on moon**.
 - His famous words were heard **by people all over the world**.
 - Before becoming **a astronaut**, he worked for the **US navy**.
 - After 1994, he refused to give **the autographs**.
 - In 2005, he was involved in a lawsuit with an ex-barber, who tried to sell some of **the Armstrong's hair**.

f **G p.151 Grammar Bank 10B**

g **C Communication** True or false **A p.110 B p.114**
Complete quiz sentences with articles.

2 READING

- a Read the introduction to the article. What do the **highlighted** words and phrases mean?
- b Look at the eight people in the photos on p.101. What do you know about them? Match sound bites A–H to the people in the photos.
- A 'I have the heart and stomach of a king.'
- B 'Government of the people, by the people, for the people.'
- C 'The laws that men have made.'
- D 'We shall never surrender.'
- E 'Ask not what your country can do for you; ask what you can do for your country.'
- F 'I have a dream.'
- G 'It is an ideal for which I am prepared to die.'
- H 'Yes, we can.'
- c **10.15** Listen and check.
- d Now read about the circumstances in which four of the speeches in **b** were made. Complete them with the person and the sound bite. Do you know in what context the other four people made their speeches?
- e Read about the speeches again and answer the questions with **QE, AL, EP** or **NM**.
Who...?
- conveyed his / her message without mentioning a key word
 - gave part of his / her speech without notes
 - gave the speech before a famous sea battle
 - summed up his / her message in ten words
 - wanted to convince his / her critics at home that they were wrong
 - was applauded for a long time after the speech
 - was helped in the delivery of the speech by his / her former occupation
 - did not live to see his / her cause made law
- f Talk to a partner.
- Whose speech would you most like to have heard? Why?
 - Do you know anyone today who you consider to be a great speaker?
 - Which past or present politicians or public figures in your country do you think are or were a) very good speakers, b) very poor speakers?

The best speeches of all time



Barack Obama



Emmeline Pankhurst



Nelson Mandela



Abraham Lincoln



Elizabeth I



Winston Churchill



John F. Kennedy



Martin Luther King

Using ¹sound bites and having ²the gift of the gab – the secrets of some of the world's greatest orators.

The perfect speaker, says Cicero, the Roman statesman considered the greatest ³orator of all time, must be well read in the history of his country and the politics of the day. He (it was always 'he' in those days) must command the language with humour, ⁴wit and psychological insight. The main point, though, says Cicero, is that you need to know the main point. If you cannot describe your main point, you probably haven't got one. By this standard, who is or was a great speaker? Who gave the finest speeches?

1 _____ to her troops before the invasion of the Spanish Armada Tilbury (port on the River Thames), August 9, 1588

THE SOUND BITE

WHY IS IT SO GOOD? This is a speech all about character, and it is a defiant speech about gender. With the Spanish Armada gathering in the North Sea, about to attack, Elizabeth knew the nation was in peril and that she faced her sternest test. She would have known, as she spoke at Tilbury, that at court, people were saying that a woman could not command the armed forces. A failure by a king would be attributed to one of many factors. A failure by a queen would be put down to her gender. Rather than ignore the question, Elizabeth chooses, brilliantly, to confront it.

2 _____ to soldiers during the American Civil War Gettysburg, Pennsylvania, November 19, 1863

THE SOUND BITE

WHY IS IT SO GOOD? Lincoln describes the ideal of democratic government in a single sentence. He gets so much into those ten words that it is surprising he needs all 272 for the whole speech. Lincoln is saying that the Civil War has to be waged for the principles of the founding fathers, who drafted the Declaration of Independence, particularly the principle of all people being equal, and at this moment, they are being betrayed. What he means, in a word he never actually uses, is slavery. Almost every American president since Lincoln has gone to Gettysburg, usually on Memorial Day, to pay homage to Lincoln and to the American constitution. One who did not was John F. Kennedy, who, in 1963, had to ask ex-president Eisenhower to stand in for him. Kennedy had to go down to Dallas on urgent political business. He never came back.

3 _____, campaigning for votes for women Portman Rooms, London, March 24, 1908

THE SOUND BITE


WHY IS IT SO GOOD? Some of the finest speakers in the history of rhetoric got into trouble because of their speeches. Pankhurst was in prison several times, and gave this speech after being released from one of them. The audience was not expecting her to appear, and the ovation when she did was prolonged. Over and above the injustice of women being excluded from the vote, she is making the practical case that the law would be improved and democracy would be enriched if it opened the door to women. Tragically, Pankhurst died three weeks before her case was accepted by the British government in 1928.

4 _____ at his trial Supreme Court of South Africa, Pretoria, April 20, 1964

THE SOUND BITE

WHY IS IT SO GOOD? The greatest speeches are the words said at the most momentous occasions, as here, where a political prisoner pleads for his life against an unjust apartheid state. Mandela speaks for more than three hours. Throughout, he is extremely reasonable, like the lawyer he once was, taking pains to reassure the white population he means them no harm. He had learned the last words by heart, and delivered them from memory, looking directly at Judge De Wet. When he finished, there was a 30-second pause – an eternity. In the gallery, a woman burst into tears.

3 LISTENING & SPEAKING

- a Have you ever had to make a speech or give a talk or presentation in front of a lot of people? When and where? How did you feel? Was it a success?
- b Look at the cartoon. What point is it making about public speaking?
- c  **10.16** Now listen to Part 1 of a radio programme where expert Lynne Parker gives tips for public speaking. Complete her six tips using between one and four words. Were any of your ideas mentioned?



- 1 Be _____.
- 2 If you're using PowerPoint, don't just _____.
- 3 Maintain _____ with your audience.
- 4 _____, _____, _____.
- 5 Include a couple of good _____.
- 6 Listen to _____.

- d Listen again and add more information about each tip.

	Dos	Don'ts
Tip 1		
Tip 2		-
Tip 3		
Tip 4		-
Tip 5		
Tip 6		-


- e  **10.17** Now listen to Part 2, an interview with Anya Edwards from Chile, who was a finalist in an International Public Speaking competition. Does she agree with any of Lynne's points?



- f Listen again. Choose a, b, or c.

- 1 Participants in the competition have to first compete _____.
a in London b in their own country c in their own language
 - 2 In the impromptu speech in the finals, you have to speak for ____ minutes.
a three b five c fifteen
 - 3 Anya thinks that being nervous is _____.
a unavoidable b an advantage c a disadvantage
 - 4 She thinks public speaking is more difficult than acting because _____.
a you have to know your subject b you have to be more convincing c you have less support
 - 5 She thinks learning to speak in public _____.
a was useful for her, but may not be useful for everybody b is useful for everybody c wasn't a particularly useful experience
 - 6 Her tip for creating the content of a speech is to start by _____.
a recording ideas b drawing a mind map c organizing your thoughts
- g Which one tip did you think was the most useful? Were there any that you don't really agree with?

4 VOCABULARY collocation: word pairs

 **Word pairs**
Try not to continually walk **up and down**...
Some pairs of words in English which go together always come in a certain order, for example, we always say *black and white*, not *white and black*. This order may sometimes be different in your language. Some word pairs are idioms, e.g. *do's and don't's* means things you should or shouldn't do.

- a How do you say **up and down** and **black and white** in your language? Are the words in the same order?
- b Take one word from **box A** and match it to another from **box B**. Then decide which word comes first, and join them with **and**.

A backwards, effect, forget, health, learn, lightning, pros, quiet, supply, sweet	B cause, cons, demand, forgive, forwards, live, peace, safety, short, thunder
--	--

- c Look at some common word pairs joined with **or**. What is the second word?
- | | | |
|----------------|-----------------|---------------|
| right or _____ | sooner or _____ | dead or _____ |
| now or _____ | all or _____ | rain or _____ |
| more or _____ | once or _____ | |

- d  **10.18** Listen and check your answers to **b** and **c**.

e Match the word pair idioms to their meanings.

- 1 I'm **sick and tired** of hearing you complain.
- 2 I didn't buy much, just a few **bits and pieces**.
- 3 I get headaches **now and again**.
- 4 **A** What's for lunch? **B** **Wait and see**.
- 5 **By and large**, I enjoyed my time at school.
- 6 The army were called in to restore **law and order**.
- 7 Despite the storm, we arrived **safe and sound**.
- 8 It was **touch and go** whether we'd get to the airport in time, but luckily we just made it.


- | | |
|--|---|
| A in general | E sometimes |
| B a situation in which the law is obeyed | F uncertain, with the possibility that something may go wrong |
| C fed up | G small things |
| D without problem or injury | H wait patiently |

f Complete the sentences with a word pair from e.

- 1 I haven't got much work to finish, just a few _____.
- 2 I don't see my uncle very often, just _____.
- 3 Let's _____ if the weather improves before we decide to go out or not.
- 4 After lots of adventures, she arrived home _____.
- 5 A few things went wrong on the first night of the play, but _____, it was a success.
- 6 After the riots, the government sent soldiers in to try to establish _____.
- 7 I'm _____ of my boss! I'm going to look for a new job.
- 8 The operation was successful, but for a few hours it was _____.

5 PRONUNCIATION & SPEAKING

pausing and sentence stress

- a**  **10.19** When people give a talk, they speak more slowly than usual, and they divide what they say into small chunks, with a brief pause between each. Listen to the beginning of a talk and mark the pauses.

Good afternoon everyone / and thank you for coming. I'm going to talk to you today about one of my hobbies, baking. I've loved baking since I was a child. My grandmother taught me to make simple biscuits and cakes, and later, when I was a teenager, I watched a lot of TV programmes and online videos to learn how to make more complicated ones. What I like about baking is that it's very creative and it makes other people happy...

- b** Now practise giving the beginning of the talk, pausing and trying to get the correct rhythm.

- c** You are going to give a three-minute presentation to other students. You can choose what to talk about, for example:

- a hobby you have or a sport you play
- an interesting person in your family
- a famous person you admire
- the good and bad side of your job or course

Decide what you are going to talk about and make a plan of what you want to say.

- d** In groups, take turns to give your presentation. Then have a short question and answer session.

6 VIDEO LISTENING



- a** Watch a short film called *Giving presentations: a voice coach*. What did Sandie criticise Louise for in her first presentation? What suggestions did she make? How did she think Louise had improved at the end of the session?

- b** Watch it again and complete the sentences with two or three words.

- 1 The one thing Louise hates about her job is _____.
- 2 Nowadays, in most jobs you need to be able to deliver a message _____ and _____.
- 3 RADA opened in the Haymarket in _____ in the year _____.
- 4 Actors and public speakers use a lot of the _____ to engage an audience.
- 5 The RADA approach can be summarized as '_____, _____, _____'.
- 6 After Louise's first presentation, the instructor gives her some _____.
- 7 Louise learns that getting your _____ right will help your breathing.
- 8 In public speaking, it's important to _____ an _____ from the beginning.
- 9 It's equally important to end on a _____.
- 10 The RADA technique gives you the skills to _____ in _____.

- c** What did you learn that might help you next time you have to speak in public?

9&10 Revise and Check

GRAMMAR

Choose a, b, or c.

- He got a good job, ___ not having the right degree.
a although b despite c in spite
- My uncle still works, ___ he won the lottery last year.
a in spite of b despite c even though
- I called my sister to remind her ___ the flowers.
a to buy b for buy c for buying
- Jane opened the door quietly ___ her parents up.
a to not wake b so that she not wake
c so as not to wake
- Adrian is looking for ___ in London.
a some cheap accommodations
b some cheap accommodation
c a cheap accommodation
- Let me give you ___ – don't marry him!
a a piece of advice b an advice c some advices
- I need to buy a new ____.
a trouser b trousers c pair of trousers
- There's ___ milk. I'll have to get some from the shop.
a no b any c none
- ___ in that shop is incredibly expensive.
a All b All of them c Everything
- They shouldn't go sailing because ___ of them can swim.
a both b either c neither
- Let's take them ___ flowers or chocolates when we go for dinner.
a both b either c neither
- I was in ___ hospital for two weeks with a broken leg.
a the b – c a
- I now live next door to ___ school where I used to go.
a the b – c a
- ___ Lake Constance is the biggest lake in Switzerland.
a The b – c A
- ___ British Museum is in central London.
a The b – c A

VOCABULARY

a Complete with the correct form of the **bold** word.

- Many people think that behaviour is _____ rather than learnt. **gene**
- Many important _____ discoveries were made in the 19th century. **science**
- We live in a very safe _____. **neighbour**
- Many people in big cities suffer from _____. **lonely**
- His _____ came as a terrible shock. **die**

b Add a prefix to the **bold** word.

- New Delhi in India is a very **populated** city.
- I asked for an aspirin, but the receptionist didn't understand me because I had **pronounced** it.
- A **national** company is a large company that operates in several different countries.
- Gandhi wrote most of his **biography** in 1929.
- Anne is unhappy with her job, because she's **paid**.

c Complete the missing words.

- Will the company make a l_____ this year?
- He borrowed £10,000 to s_____ his own business.
- Ikea is the market l_____ in cheap furniture.
- The company are planning to l_____ their new product in the spring.
- The bank has br_____ all over the country.
- It's a bad idea to mix b_____ with pleasure.
- In a property boom, house prices r_____.
- The drug has some very unpleasant s_____ effects.
- We need to c_____ out some more experiments.
- Would you ever be a g_____ pig in a clinical trial?

d Complete the two-word phrases.

- I'm going to the mountains for some peace and _____.
- He arrived back from his adventure safe and _____.
- Sooner or _____, we'll have to make a decision.
- It's a very dangerous city. There's no law and _____.
- It's our last chance to do this. It's now or _____.

PRONUNCIATION

a Circle the word with a different sound.

-  branch expand **antidote** gravity
-  product **government** poverty modernism
-  volunte**er** theory research **idea**
-  recession expectation **decision** antisocial
-  death **though** width **thought**

b Underline the main stressed syllable.

- bi|o|lo|gi|cal 3 mul|ti|cul|tu|ral 5 man|u|fac|ture
- phy|si|cist 4 in|crease (verb)

CAN YOU understand this text?

- a Read the article once. Why did Stephen Hawking never change his computer voice?
- b Read the article again and choose a, b, or c.
- 1 Stephen Hawking used a computer voice synthesizer to communicate for over...
 - a 30 years.
 - b 40 years.
 - c 55 years.
 - 2 He started using the voice when...
 - a he was diagnosed with motor neurone disease.
 - b he lost the power of speech after an operation.
 - c pneumonia caused him to lose his voice.
 - 3 His accent surprised people because...
 - a the synthesizer was made in Britain.
 - b they expected his voice to sound British.
 - c American accents were not popular in Britain.
 - 4 Stephen Hawking...
 - a thought that his accent sounded very American.
 - b told the Queen that his accent wasn't American.
 - c said his accent sounded different to different people.

▶ CAN YOU understand these people?

▶ 10.20 Watch or listen and choose a, b, or c.



1 Thomas 2 Devika 3 Noel 4 Sophie

- 1 Thomas admires Nike because of its _____.
 - a slogan and customer service
 - b logo and marketing
 - c name and the quality of its product
- 2 Devika thinks that ____ cities will change a lot in the next 20 years.
 - a some European
 - b modern, wealthy cities
 - c developing industrial
- 3 Noel thinks that science _____.
 - a is just as creative as the arts
 - b is more useful than maths
 - c should focus on climate change
- 4 Sophie passed her exam although _____.
 - a she didn't do her PowerPoint presentation
 - b she didn't enjoy doing her PowerPoint presentation
 - c her PowerPoint presentation was a disaster

THE VOICE OF REASON

Why Stephen Hawking's voice computer spoke with an American accent

Stephen Hawking, the legendary English cosmologist, author of *A Brief History of Time*, was regarded as a brilliant theoretical physicist, and for the British people, a national treasure. However, his famous computer-generated voice left many people puzzled.



Hawking died in 2018 at the age of 76. In 1963, while studying at Oxford, he was diagnosed with amyotrophic lateral sclerosis (ALS), a rare form of motor neurone disease. Incredibly, despite a poor prognosis, he lived with the disease for 55 years until his death. After catching pneumonia in 1985, Hawking had to have a tracheotomy to allow him to breathe. This left him unable to speak. After that, the professor's primary means of communication was a computer voice synthesizer which he controlled first with a hand-held clicker, and later with a sensor attached to his cheek. This computer-generated voice, known by its US developers as 'Perfect Paul', became Hawking's iconic voice, recognized around the world.

One thing that puzzled many people, however, was why his computer spoke with an apparent American accent, in spite of the fact that he was born in Oxford, in the UK. The Queen even quizzed him on the matter, asking him, 'Have you still got that American voice?' when meeting him at an event at St James' Palace. He joked back, 'Yes, it is copyrighted actually.'

Hawking had previously answered the question on his own website. Explaining how his speech worked, he wrote: 'When I have built up a sentence, I can send it to my speech synthesizer. I use a separate hardware synthesizer, made by Speech Plus. It is the best I have heard, although it gives me an accent that has been described variously as Scandinavian, American, or Scottish.'

He also explained that he would have been able to change the accent of his computer when the technology advanced, but had decided against it. Hawking added: 'My old system worked well and I wrote five books with it, including *A Brief History of Time*. It has become my trademark and I wouldn't change it for a more natural voice with a British accent. I am told that children who need a computer voice want one like mine.'